



## The Importance of the Number Six (and its Multiple Twelve)

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### Perspective

Undoubtedly, the number six and its multiple have fascinated the human race for many centuries. There should be a sort of divine inspiration to explain the obsession of some exponents of human race towards this number. Hands up those within the medical community who are not used to book follow-up clinical appointments "in six weeks" at least once in their life. Why? There is no apparent reason... It could be 4 weeks, a month (which is slightly more than 4 weeks), 8 weeks... Why six? There is no clinical reason to follow up a patient after 1 month and a half..

Quite recently, during the dispute on the new job plan of junior doctors, the UK secretary of state for Health, Jeremy Hunt, declared he was "ready to impose a new contract if negotiations are not successful within six weeks". Why did he establish this precise deadline?

It came to me that the word "six" is most definitely the shortest and quickest to pronounce within the whole row of natural numbers and twelve – twice six – are the signs of the zodiac, but I am not at all sure those are the main reasons for the obsession with the number six.

The truth is that six and its multiple are divinely inspired symbols with many biblical references, in particular in the form of "twelve".

My experience and knowledge is limited to the Holy Bible but I am sure the same concepts can be found also in the Quran and in many other Holy Books.

In the Bible, the number six and its multiple are reported more than one thousand times. The linguistic analysis of the numbers of the Bible – and in particular of the Old Testament, which is the basis of the Kabbalah – is terribly interesting but is beyond the scope of this editorial. However, I feel I got to recall some fundamental points.

During the Creation of the World, God "worked" for six days, and got a bit of rest only on day 7, so men are supposed to work six days a week and devote the seventh to God. Noah was six hundred year-old when the Flood came. Six hundreds were the Hebrew men – besides women, children and animals - who escaped the Egyptian captivity according to the Exodus. Even more interesting is the symbolism linked to the number 12, which is the first multiple of 6. The tribes of Israel, one for each of Jacob's sons, were twelve, as Jesus' Apostles. According to the book of Apocalypse (Revelation), the number of "sealed" and saved at the end of times will be one hundred and forty-four, which is clearly 12 square and a multiple of 6 – as  $144 = (2^2 \times 3)^2$ .

### So why this Continuous Reiteration of the Number Six and What is its Role in Surgery

According to a basic kabalistic interpretation, six - 3 x 2 - means the divine - 3 - intervention in human affairs - 2. Twelve – or 144,000 – men have been chosen by God to be saved. In six - 3 x 2 - days God made Man and his World.

Six is the encounter between divine and human, between transcendent and immanent. Twelve and his square 144 are just multiple which are meant to reinforce the kabalistic concept.

I wonder if this is the hidden reason why these numbers are so frequent in Medicine and in Surgery.

A D1 lymphadenectomy for gastric cancer entails removal of nodes of the stations 1 to 6, whereas with the more extensive D2 lymphadenectomy the surgeon should be able to clear the stations up to n.12.

Even more intriguing is the obsession for the number twelve in bowel cancer surgery. The

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number of lymph nodes removed and analysed after colorectal resection for cancer is traditionally considered to be a quality indicator of the effectiveness of the surgical resection. However, the number of lymph nodes analysed from a specimen of bowel resection for cancer is not a direct function of the surgical technique, but is more often dependent by other factors, such as the technique of nodal harvesting in the laboratory, skills of the pathologist, time and workload of the pathologist. So, far from being a direct indication of the quality of the surgical lymphadenectomy, the number of lymph nodes analysed is considered to be a general indicator of the global quality of the team dealing with bowel cancers [1].

At the 1990 World Congress of Gastroenterology in Sidney it was – quite artificially – established that the optimum number of lymph nodes to be sampled is twelve [2]. This has subsequently been endorsed by European and US guidelines [3,4].

Once again, there is no specific, high quality clinical reason for the choice of this number. The statement of the Sidney World Congress was only a grade C recommendation based on low-level evidence [1].

Good evidences demonstrate that the higher is the number of lymph nodes sampled, the better is long term survival, without any clear cut-off [5]. This can be explained by the fact that patients where more lymph nodes have been analysed are more likely to receive adjuvant chemotherapy.

On the contrary, setting a precise cut-off only offers an excuse to both surgeons and pathologists to perform a suboptimal job, at the same time fulfilling the written guidelines. Some surgeon may in fact decide to perform an easier and quicker limited resection removing only pericolic lymph nodes - more than enough to get 12 nodes - or some pathologist may decide to pick up only 12 nodes, of the many more present on a good surgical specimen, just to fulfill the standards, without going the extra mile and trying and get the most from that pathologic examination. This risk is clearly demonstrated by the fact that in some series the median number of nodes examined is exactly twelve [6]. Clearly, this behavior has important ethical and medico-legal implications.

Correctly it has been recently recalled that the surgeon must always perform an oncologically correct resection, removing the whole mesocolon or mesorectum with their lymph nodes and the pathologist must sample and analyze all the lymph nodes present in the specimen or at least as many as possible [1]. New sampling techniques, such as fat dissolution or vital staining, can be helpful in picking up more lymph nodes than with the usual macroscopic dissection [7,8].

Although still in the guidelines, the “totem” represented by the number 12, first multiple of six, is progressively losing his central role in oncologic colorectal surgery, but so strongly is the archetype buried in our human mind that someone has recently proposed to increase the minimum number of nodes to be examined to 21 [6], which is evidently the graphical reverse of 12!

However, 21 has a deeper significance, being the results of 3 x 7. Three is the number of God, the quintessential perfect number. The number seven has even a deeper role, being considered the representation of the Whole and the Creation. With respect to 12, 21 has lost its “human” factor, bearer of error and fault. It is a divine number that had and has a central role in many different cultures. Seven is the number of the deep research – the alchemical acronym VITRIOL (“*Visita Interiora Terrae et Rectificando Invenies Occultam Lapidem*” can be translated as “Look in the depth of the Earth and following the right path you will find the hidden stone”) is formed by 7 letters...

Is there anything deeper than abdominal and pelvic lymphadenectomy?

It necessarily follows that 21 can be interpreted as going deep into the unique God-derived human body to find its hidden significance, as a surgeon dissects the human tissues to find an answer to his/her prognostic questions.

Being a pure divine number, twenty-one is the ideal candidate to replace twelve in the collective imagination and as a totemic oncologic number.

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